CURRENT BEST PRACTICES FOR PCBS IN CAULK FACT SHEET
Interim Measures for Assessing Risk and Taking Action to Reduce Exposures
Last Updated: October 2009

PCBs in caulk

EPA has learned that caulk containing polychlorinated biphenyls (PCBs) was used in many buildings, including schools, during building construction, renovation, or repair from the 1950s through the late 1970s.

This fact sheet identifies for school system officials:

- key steps necessary to conduct a preliminary assessment of PCBs in the air in buildings,
- interim actions that may be taken to prevent or reduce potential exposures to building occupants until the caulk is removed, and
- who to contact at EPA for advice on addressing PCBs in caulk.

PCBs were not added to caulk after 1978. Therefore in general, schools built after 1978 do not contain PCBs in caulk. To date it has been found in buildings in the Northeast and Upper Midwest and in joints in concrete water storage basins in the western United States. Activities to address PCBs in caulk are underway in these areas. EPA is encouraging greater awareness of this issue so people can take steps to minimize potential exposure.

Exposure to PCBs can cause a variety of adverse health effects in animals and humans. PCBs have been shown to cause cancer in animals, as well as a number of serious non-cancer health effects, including effects on the immune system, reproductive system, nervous system, endocrine system and other health effects. In humans, PCBs are potentially cancer-causing and can cause other non-cancer effects as well. For more information on the health effects of PCBs, go to: www.epa.gov/epawaste/hazard/tsd/pcbs/pubs/effects.htm.

Please note that these are general guidelines. Different actions may be appropriate for different sites based on the PCB concentrations in air, and the condition and location of the caulk.

Test for PCBs that may be present in buildings built between 1950 and 1978

If school administrators and building owners of buildings built between 1950 and 1978 are concerned about exposure to PCBs from caulk, EPA recommends that you test for PCBs in the air. If PCBs are found in the air, EPA will assist in developing a plan to reduce exposure and manage the caulk. Your EPA regional PCB coordinator can direct you to a PCB testing lab. EPA recommends that if it is deteriorating or flaking, the caulk be tested and removed if PCBs are present at significant levels.

As part of EPA's overall effort to provide guidance to building owners concerning PCB containing caulk in buildings, EPA has produced three other fact sheets that address testing the air, and cleanup and disposal of caulk. These fact sheets can be found on EPA's website at http://www.epa.gov/pcbsincaulk.

Key steps to assess PCBs in caulk

To assess the situation at any given building, consider the following four factors:

1. Review and analyze any available test data on the concentration of PCBs in the air, soil or in the caulk, and other building materials, including records about construction or the product, or when it was installed. Read EPA's fact sheet on Testing for PCBs in Caulk in Buildings at www.epa.gov/epawaste/hazard/tsd/pcbs/pubs/caulk/caulktesting.htm.

2. Assess the location and condition of the caulk including if it is deteriorated or if it has been tracked or fallen into surrounding areas such as a playground adjacent to the building or other rooms in the building. Areas that should be assessed include:

- caulk used to seal windows and expansion joints. Note any areas where caulk is peeling, cracking, brittle or deteriorating or has been removed and replaced from a past renovation;
- caulk found inside the building on the floor, window sills, ledges, concrete joints, or other areas;
- outdoor areas where any caulk is found on the ground or where peeling caulk is seen. This may be of particular concern if the caulk is on the exterior of the building where it may have impacted the soils, particularly if there are routinely used areas nearby, such as gardens, play areas, bus stops and student pick up areas;
- indoor halls and common use areas, including school classrooms, particularly if the walls are rough masonry and there appears to be the potential for caulk to peel and fall to the floor or to be touched or peeled away by a child or adult;

3. Determine the potential for human exposure to the caulk (e.g., is it in an area where people can readily come in contact with it?)

Frequency and duration of exposure

The extent of exposure to PCBs in caulk is determined by the frequency and the duration of contact or presence with the caulk. For each place at the school or other building where there is caulk, consider the frequency (how often the contact occurs) and duration (length of time of each contact) of exposure.

- Start with the areas where the caulk is in poor condition (i.e., cracking, flaking, or peeling).
- Consider areas outdoors as well as indoors where children, teachers, staff or others may touch, ingest, breathe in dust, or otherwise come into contact with any material that potentially has been contaminated by PCBs from the caulk.
- Special emphasis should be given to routine use areas such as gardens, play areas, bus stops, and student pick up areas.

Read EPA's fact sheet on Testing for PCBs in Caulk in Buildings at: www.epa.gov/epawaste/hazard/tsd/pcbs/pubs/caulk/caulktesting.htm.

The table below provides some simplified examples of the potential concern level when PCBs are found in caulk and/or the surrounding areas. However, a site-specific risk assessment would need to be conducted in order to truly determine the risk until the caulk is removed.

Examples of Potential Categories of Concern

Condition of Caulk	**Exposure Rating**	**Category of Concern**	**Examples**
Deteriorating Caulk	High Exposure	Highest concern	Room occupied all day that has PCB window caulk that is peeling and falling on window sill and/or floor
Questionable condition	Moderate exposure	Medium concern	PCB-containing caulk that is covered with a second layer of caulk and paint on a pillar by a bus stop
Deteriorating Caulk	Infrequent exposure	Medium concern	PCB-containing caulk in an expansion joint on a masonry pillar outside the entrance to the building, where the caulk is covered with a second layer of caulk and paint that is beginning to peel and crack
Intact caulk	Infrequent exposure	Lower concern	PCB-containing caulk is on the exterior of the building at the 2nd story or higher

4. Identify interim actions to minimize exposure

Caulk that contains PCBs at greater than 50 ppm is not authorized for continued use and must be removed. Although you are not required to remove caulk containing PCBs at levels below 50 ppm, you may wish to because the caulk may present health risks depending on the location, condition, etc. EPA recommends that owners and managers of buildings where PCBs are found take steps to minimize current potential exposure to building occupants until the caulk and contaminated surrounding materials can safely be removed. These recommendations include:

- **Minimize contact with PCB-containing caulk and its residues**. Disintegrating caulk may also shed dust that can contaminate window sills and other nearby surfaces.

- **Take interim steps to reduce exposure.** Interim steps that may reduce exposure include changing use patterns, such as keeping people away from areas with contaminated soil

such as under windows or expansion joints. In addition to isolating the area and keeping people away, proper cleaning of nearby surfaces can minimize both occupant and worker exposure to PCBs-containing caulk residues.

If elevated levels of PCBs are found, schools should also have the ventilation system evaluated to determine if it is contaminated with PCBs. Although the ventilation system is unlikely to be an original source of PCB contamination, it may have been contaminated before other sources of PCBs were removed from the school and may be contributing to elevated air levels. Contaminated ventilation systems should be carefully cleaned. Ideally, such cleaning should be planned in concert with removal of any sources of PCBs that are found to avoid re-contamination of the system.

- **Adopt safe work practices.** While not studied for PCBs, here are some work practice guidelines for proper cleaning that have been proven effective for post renovation cleanup of lead-based paint* in order to minimize exposure to contaminated dust:
  - Clean frequently to reduce dust and residue inside buildings;
  - Use a wet or damp cloth or mop to clean surfaces;
  - Use vacuums with high-efficiency particulate air (HEPA) filters;
  - Do not sweep with dry brooms; minimize the use of dusters;
  - Wash hands with soap and water after cleaning, and before eating or drinking;
  - For caulk used on windows, walls, columns and other vertical structures that people may come into contact with, use heavy-duty plastic and tape to contain the area so that caulk or dust and debris from the surrounding masonry do not escape. The plastic should cover the caulk and surrounding areas of masonry;
  - Wear the appropriate protective clothing when conducting this cleanup;
  - Dispose of all cleanup materials (mops, rags, filters, water, etc.) in accordance will all federal, state, and county regulations;
  - Improve ventilation and add exhaust fans.

*See www.epa.gov/lead

EPA is helping to address the issue of PCBs in caulk

EPA is conducting research on how the public is exposed to PCBs in caulk and on the best approaches for reducing exposure and potential risks associated with PCBs in caulk. Where PCBs have been found in the air, soil or in the caulk and other building materials, EPA is committed to helping schools and communities enact plans to reduce exposure. Please contact your regional PCB coordinator at 888-835-5372 for help with assessing contamination and exposure and developing cleanup plans.

Ask EPA experts for help addressing PCBs in caulk

For more information, contact EPA's PCBs in Caulk hotline at 888-835-5372. You may also wish to contact your local public health department.

This fact sheet is intended solely for guidance and should be used as an informal reference. It does not replace or supplant the requirements of the Toxic Substances Control Act or the PCB regulations at 40 C.F.R. part 761, and it is not binding on the Agency or individuals. Please refer to the regulations at 40 C.F.R. part 761 for specific requirements relating to PCBs and PCB-containing materials.